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# Unilateral mesh pectopexy in a patient with severe pelvic adhesions

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**Case Report**

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**Additional Declarations:** No competing interests reported.

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# Abstract

Laparoscopic pectopexy is an alternative for pelvic organ prolapse when sacral promontory exposure is unsafe. A 54-year-old nulliparous woman with stage  pelvic organ prolapse and extensive pelvic adhesions underwent unilateral mesh pectopexy because the adhesions precluded sacrocolpopexy and bilateral fixation. At 12-month follow-up, she remained asymptomatic without prolapse recurrence or mesh-related complications. Unilateral mesh pectopexy may be a feasible alternative when extensive adhesions prevent conventional procedures.


# Introduction

Pelvic organ prolapse (POP) is a common gynecological condition that can significantly impair quality of life. Laparoscopic sacrocolpopexy is widely accepted as the standard surgical treatment for apical prolapse. However, exposure of the sacral promontory may be unsafe in patients with extensive intra-abdominal adhesions. In such cases laparoscopic pectopexy represents an alternative approach, in which a mesh is anchored to the iliopectineal (Cooper's) ligament [1, 2].

# Case Presentation

A 54-year-old nulliparous woman with a history of four abdominal surgeries presented with stage II POP. Laparoscopic sacrocolpopexy was planned; however, dense pelvic adhesions prevented safe exposure of the sacral promontory. Although the left Cooper's ligament was identifiable, the right pelvic sidewall was severely adherent, rendering bilateral fixation unsafe. Therefore, unilateral mesh pectopexy was performed by anchoring a polypropylene mesh to the left Cooper's ligament and fixing it to the cervical stump under moderate tension.

At the 12-month follow-up, the patient remained asymptomatic with no evidence of prolapse recurrence or mesh-related complications.

# Discussion

This case demonstrates that unilateral mesh pectopexy can provide adequate DeLancey level-II support while minimizing operative risk in patients. Previously, unilateral pectopexy has been described as a mesh-free unilateral pectineal suspension to preserve physiological pelvic mobility. Moreover, asymmetric mesh fixation may also reduce excessive bilateral tension. Therefore, unilateral mesh pectopexy may represent a feasible and safe modification of conventional pectopexy for patients with extensive adhesions. Although this case resulted in unilateral pectopexy due to adhesions, this method provided advantages, including preservation of pelvic mobility, reduced surgical complexity, and safety.

# Declarations

**FINANCIAL DISCLAIMER/CONFLICT OF INTEREST**

None.

**Ethics approval**

This case report was approved by the SHOWA Medical University Research Ethics Review Board (approval NO. CR2026033). All procedures were performed in accordance with the Declaration of Helsinki and its later amendments.

**Consent to participate**

Written informed consent to participate was obtained from the patient.

**Consent for publication**

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

**Competing interests**

The authors declare that they have no competing interests.

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The authors received no funding for this work.

**Author Contribution**

Author confirmation: Ishikawa: Manuscript writing, Data collection. Ogura: manuscript writing, Data collection. Each author confirms their participation in this study.

**Data Availability**

All data generated or analysed during this study are included in this published article.

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# Figures

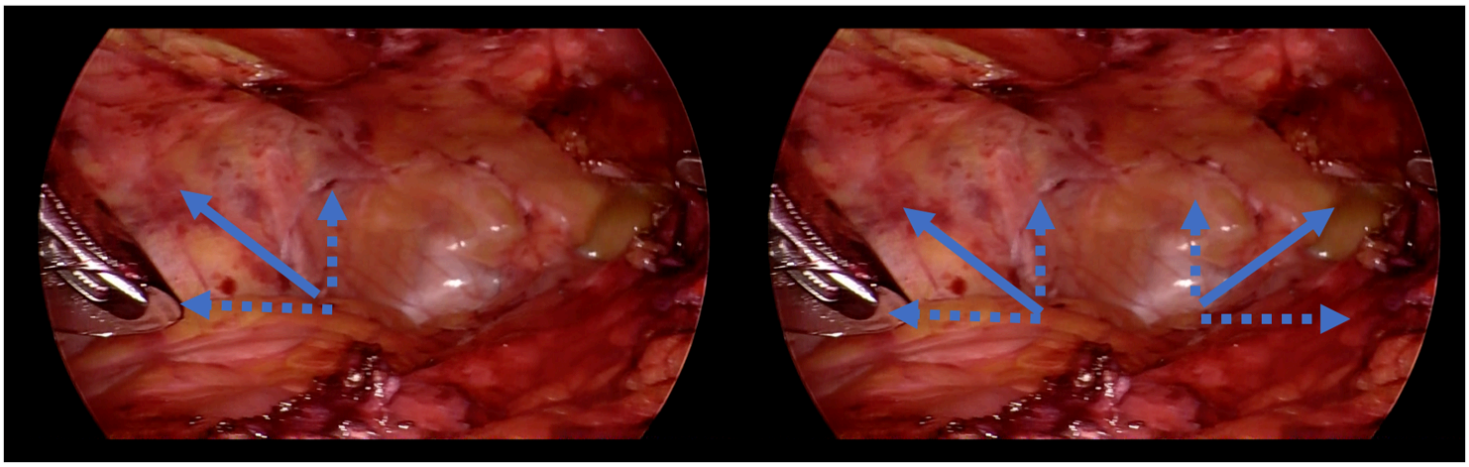

**Figure 1**

**Conceptual illustration of tension vectors in bilateral versus unilateral mesh pectopexy**. The difference in tension distribution between unilateral mesh pectopexy and standard bilateral mesh pectopexy is illustrated. In bilateral pectopexy (left panel), the vaginal apex or cervix is suspended symmetrically to both iliopectineal (Cooper's) ligaments using a mesh, generating balanced upward tension vectors. This configuration provides robust apical support but may restrict physiological pelvic mobility due to symmetric fixation. In contrast, unilateral mesh pectopexy (right panel) anchors the mesh to a single iliopectineal ligament. The unilateral tension vector provides adequate DeLancey level-II support while allowing controlled rotational movement of the vaginal apex. This asymmetric force distribution may preserve physiological pelvic mobility and reduce excessive tension associated with bilateral fixation [3].

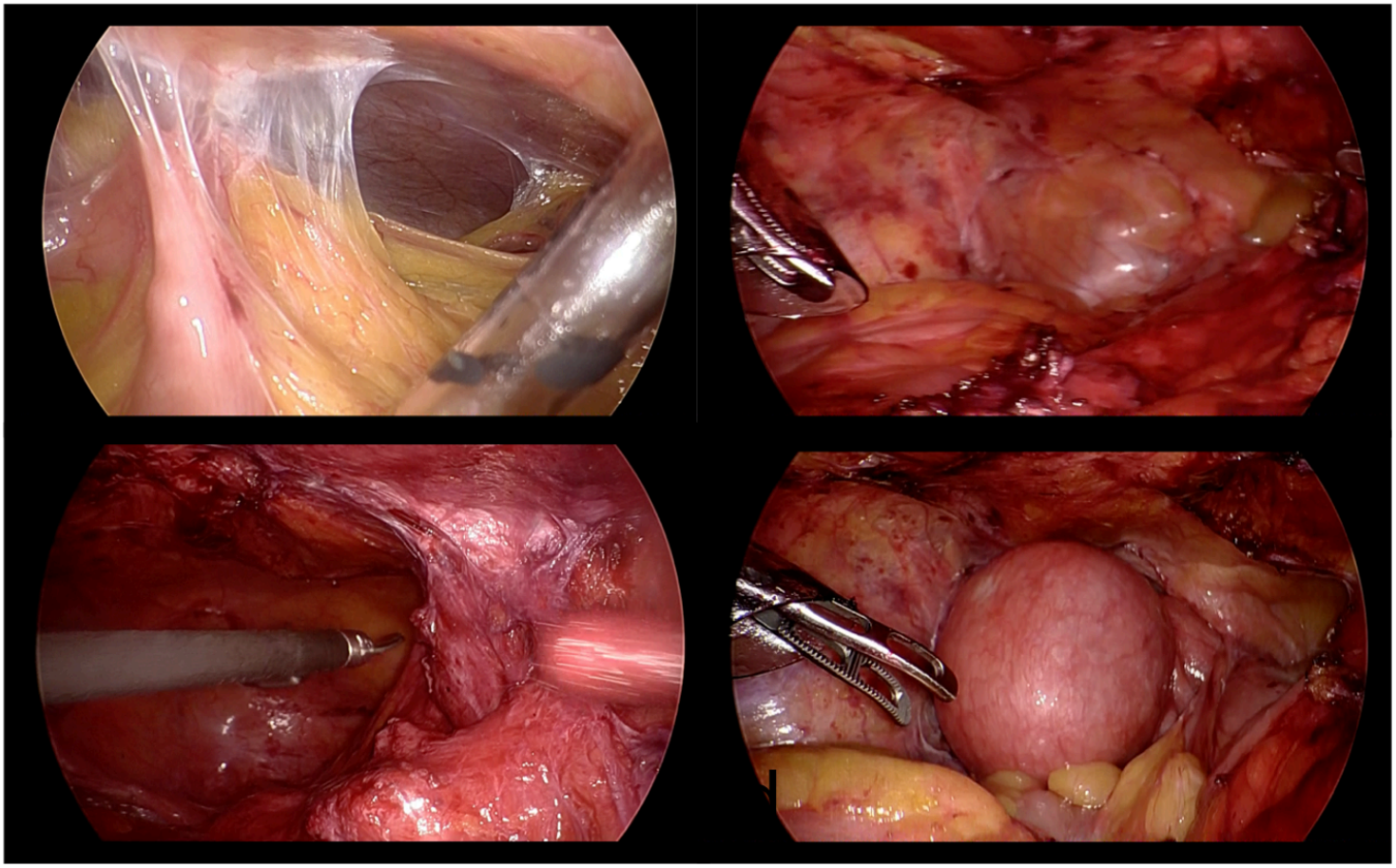

**Figure 2**

**Intraoperative findings and surgical decision-making**. Extensive intra-abdominal adhesions prevented adequate bowel mobilization; therefore, laparoscopic sacrocolpopexy was deemed unfeasible (a). Adhesiolysis of the bowel and omentum was performed to facilitate pectopexy. However, safe exposure of the right Cooper's ligament was not possible, and unilateral left-side pectopexy was subsequently performed (b, c**).** Further adhesiolysis allowed complete visualization of the uterus (d).

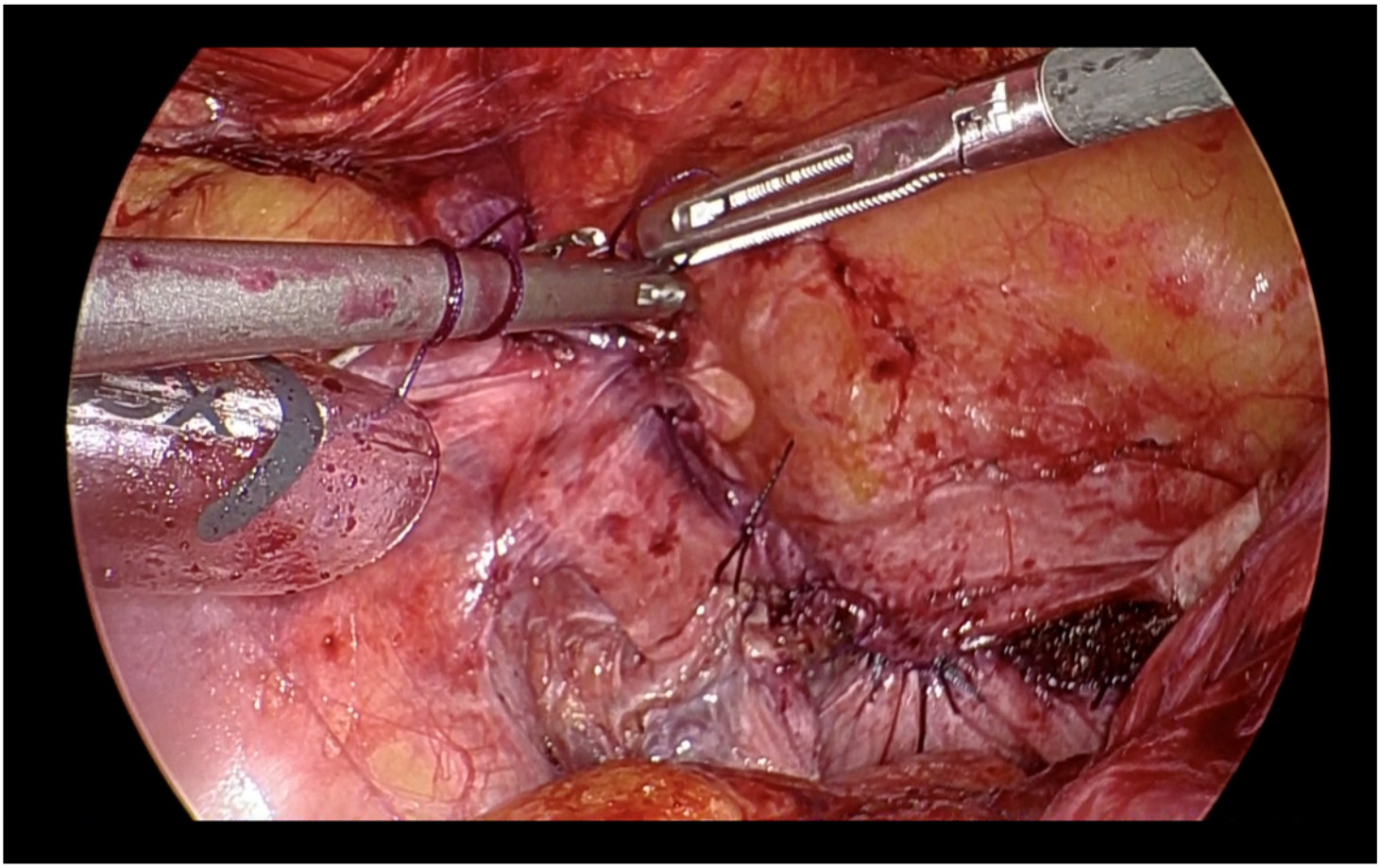

**Figure 3**

**Completed left-sided unilateral mesh pectopexy**.